Greetings from Kyoto-U

楽友 Raku-Yu

Kyoto University Newsletter

AUTUMN 2013
Issue **24**

CONTENTS

Editor's Notes

The cover image for this issue of *Raku-Yu* summons thoughts about worldviews, the bearing of culture on individual perception, the history of ideas and human creativity. When new theories emerge, they are often ridiculed by those whose work is based upon the assumptions of status quo beliefs. Presented with competing understandings, individuals must decide which ideas, and which leaders, to follow. The inspiring leader Aung San Suu Kyi in her recent Kyoto University talk stressed the great untapped potential that female creativity offers societies. Today, discipline-area specializations are increasingly narrowed and compartmentalized. While detailed specialist knowledge is valuable, overly-specialized study might impede creative solutions. Today's young researchers are future leaders who will need to tackle highly complex systemic problems. This issue of *Raku-Yu* emphasizes the importance of leadership in contemporary society and highlights the need for students to broaden their understandings through area studies, research collaborations and fieldwork abroad.

Cover: *"Illustration of an Orrery"* from the Series of Copper Engravings by Kokan Shiba

Kokan Shiba (1747 – 1818) was a leading artist of the Edo Period (1603 – 1868). Although he started his artistic career by learning Japanese-style painting, basically at the Kano School, in time he became interested in Western-style painting. In 1783, he produced Japan's first copper engraving. He was indeed a man of great curiosity, which led him to paint three-dimensional *yofuga* (Western-style paintings using Japanese paints and materials) and oil paintings, using various Western painting techniques, including perspective and shadow methods.

In addition to art, he was interested in natural sciences and studied *rangaku* (Dutch studies). He published books on world geography and astronomy, with colorful illustrations and copperplate engravings. The Kyoto University Library owns his series of 12 copperplate engravings, with motifs range from snow crystals to insects, a world map and vigorous solar activity. From the 12-work series, the cover of this issue displays the engraving of an *orrery*, a mechanical device that illustrates the relative positions and motions of planets in the Solar System in a heliocentric model. In addition to works by Shiba, the Kyoto University Library owns many valuable historical materials, including books published during the Edo Period on the subjects of astronomy, mathematics, engineering and natural history. These materials attest to the fact that Japanese people during that period were extremely keen to learn the natural sciences and had advanced knowledge and technologies of a surprisingly high level.

Editor in Chief
Shuichi HOKOI

Associate Editor
Naoko SAITO

Senior Editors
Tomoyuki ARAKAWA
Makoto HIJIKATA
Akihiko KOGA
Kazuya NAKAMURA
Rajib SHAW
Timothy William STEWART
Takeshi YAMASHITA

Coordinator
Daichi UCHIBORI

Editorial Collaborator
KOSOSHA CO.,LTD.

Printed by
KOSAIDO CO.,LTD.

A Note on Order of Names

As a general rule, names appearing in *Raku-Yu* are written in given name/family name order.

楽
Raku-Yu means to respect, treasure, and enjoy one's friendship.
友

This name was taken from the assembly hall called "*Raku-Yu Kaikan*" that commemorated the 25th anniversary of the founding of Kyoto University.

Michiaki MISHIMA Since his boyhood, Executive Vice-President Mishima, who was born in 1951, has been an extensive reader. Because of his interest in a broad range of academic fields, he once planned to major in literature or civil engineering, but he finally enrolled at the Faculty of Medicine at Kyoto University. He found that the broad spectrum of his knowledge of humanities was useful in his service as a physician. He often tells students the vital importance of double "Ss," comprising Science and Service, based on his conviction that physicians must serve patients by exploiting whatever knowledge and skills they have. To this end, he believes that physicians must acquire a broad knowledge covering not just medical science but also various other academic disciplines. With a smile, he said, "The medical profession is just the right occupation for me."

For five and a half years since 1992, he engaged in research activities at McGill University in Canada. In 2001, he was appointed as a professor at the Graduate School of Medicine, Kyoto University, and at Kyoto University Hospital. In 2011, he was designated as Director of the University Hospital. Since 2012, he has been Executive Vice-President for International Affairs and Hospital Administration. To fulfill his role in leading the university's internationalization, which is one of its priority tasks, Executive Vice-President Mishima has been preparing a new international strategy for the university by holding discussions with other leaders. "Having assumed the position of Executive Vice-President, I have begun to view the university from a broader perspective and to consider more deeply ways to internationalize the hospital. I am pleased that the entire university is now united to promote its internationalization," Dr. Mishima explained. To our question about his hobbies, he said that he loves climbing mountains around the margin of the Kyoto Basin. From the summit he no doubt views not just the Kyoto Basin spreading below, but also the entire world lying far beyond the mountains.

Kyoto University: A Pioneer of the Future World

Since October 1, 2012, I have been Executive Vice-President for International Affairs and Hospital Administration. Amid growing calls for reforming universities, our priority tasks include the internationalization of Japanese universities. To further develop Kyoto University as an institution that generates world-class knowledge, we should prepare new international strategies and dynamically implement practical action plans. With this in mind, in June 2013, we adopted new international strategies with the following three major goals. The first goal is promoting research programs with excellent global competitiveness. The second goal is reinforcing international education, designed to foster human resources with a global perspective and competency. The third is promoting international contribution toward the realization of a harmonious global community. Moreover, Kyoto University intends to double its internationalization scores by 2020 (2 by 2020) so as to win recognition as a World Premier University (WPU) and to be ranked among the top ten universities in the world.

Kyoto University Hospital features abundant world-class medical facilities, including Kyoto University Cancer Center, which is the first cancer center in a Japanese state-university hospital; the Organ Transplant Unit, which boasts of world-class achievements; the Clinical Research Center for Medical Equipment Development, which fosters human resources to be engaged in the development and management of cutting-edge medical equipment; and the Division for iPS Cell Application Development, dedicated to clinical applications of iPS cells to drug discovery and regenerative medicine. Moreover, the Hospital has been designated by the national government as a Clinical Trials Core Hospital, to serve as a national core center of clinical researches. The internationalization of medical treatment is one of the most pressing issues for us. To this end, we are promoting exchange programs with medical professionals in diverse countries. Making effective use of our medical resources, particularly those accumulated in the said facilities, Kyoto University Hospital seeks to achieve the radical innovation of medical treatments, thus contributing to society.

Since Kyoto University has grown into such a large organization with a great many constituents, to ensure its further growth, it is imperative that all constituents be unified and concert their efforts to ensure the continuous growth of their beloved university. I firmly believe that Kyoto University, comprising exceptional students, faculty members, and staff members, with extraordinary affection for the university, will long remain a pioneer of the future world.

Michiaki MISHIMA
Executive Vice-President of Kyoto University

The Graduate School of Advanced Integrated Studies in Human Survivability (*Shishu-kan*)

The Graduate School of Advanced Integrated Studies in Human Survivability (GSAIS) was launched at Kyoto University in the 2013 academic year. This is a new 5-year Graduate School aiming to cultivate future global leaders through teaching and research on human survivability.

The purpose of the GSAIS is to produce top-level global leaders who can help to resolve the complex, diversified and integrated social issues facing contemporary societies. As leaders, graduates should develop a strong sense of responsibility, humanity and morality, along with wisdom and highly developed management skills. Advanced Integrated Studies in Human Survivability is defined as an academic discipline that explores a broad spectrum of thoughts, policies and methods to deal with complex world issues and contribute to the survival of humankind and the global community. In other words, Advanced Integrated Studies in Human Survivability is an integrated field of scholarship that studies ways to structure and share knowledge for human survivability. Through their studies at the GSAIS, the students are expected to assume responsibility as global leaders and develop a high sense of mission and perspectives both in Japan and internationally.

The educational program at the GSAIS is supported by the Leading Graduate School Program, which is run by the Japanese Ministry of Education, Culture, Sports, Science and Technology.

1. Background and scope

Global issues are becoming more complex and diverse in various systems such as politics, economics, culture and industry. All these issues are of considerable magnitude and their complex nature may pose an imminent threat to the harmonious coexistence of humankind. To address such global issues, we aim to train future leaders who have the abilities to discover, analyze, formulate and structure important social issues in order to formulate possible solutions for implementation.

Our goal is to train global leaders who have the ability to put their studies into perspective, GSAIS graduates should be able to impart a broad range of knowledge, apply their advanced expertise to resolutions of social issues, and foster their capabilities to integrate and fuse such knowledge for practical application.

2. Educational curricula

During the 5-year doctoral course, the GSAIS provides the students with unique curricula. The education at the GSAIS is centered on the traditional philosophy that learning occurs through hearing, thinking and practicing (a Buddhist term "*mon-shi-shu*" on which the program's name is based). Students are expected to enhance their ability to adopt an all-encompassing perspective across various fields by building a broad spectrum of professional learning, ranging from the humanities through sciences and based upon the body of academic knowledge they acquired during their undergraduate studies. The educational and research training is globally focused and conducted mainly in English.

The GSAIS curricula have the following features.

a) Tailor-made curricula

Depending on their academic background and future goals, individual students should construct their own study plans during the five-year program, with advice from their supervisors.

b) An educational curriculum focusing on dialogue and debates (*Jukugi*)

Students have many opportunities to discuss various issues with faculty members and other students. They also attend debates organized to air the view of external lecturers from industry and government (Industry-Government Cooperation Special Seminar *Jukugi*).

c) Mentorship from multiple supervisors

Our students enjoy the advantage of a multiple supervisor system involving faculty members together with research guidance collaborators. Mentors include faculty members who teach relevant subjects in other graduate schools at Kyoto University, thereby effectively underpinning students' education and research activities.

Supervisors guide students as they hone their basic research skills aiming to assimilate and create models based on the empirical knowledge that students gain from the social implementation of such skills, both in Japan and abroad.

3. Course work, internships and fieldwork

Internships, fieldwork, and project-based research are important course requirements designed to raise students' attributes and capabilities to the levels stipulated in the diploma policy of the GSAIS; namely, the levels required to enable them to defend their doctoral theses. Such attributes and capabilities include the humanity to act independently as a member of global society, the capability to gain a deep and balanced understanding of social issues, and the strengthening of ethical responsibility to motivate graduates to fulfill public missions.

Internships (service learning in and outside Japan)

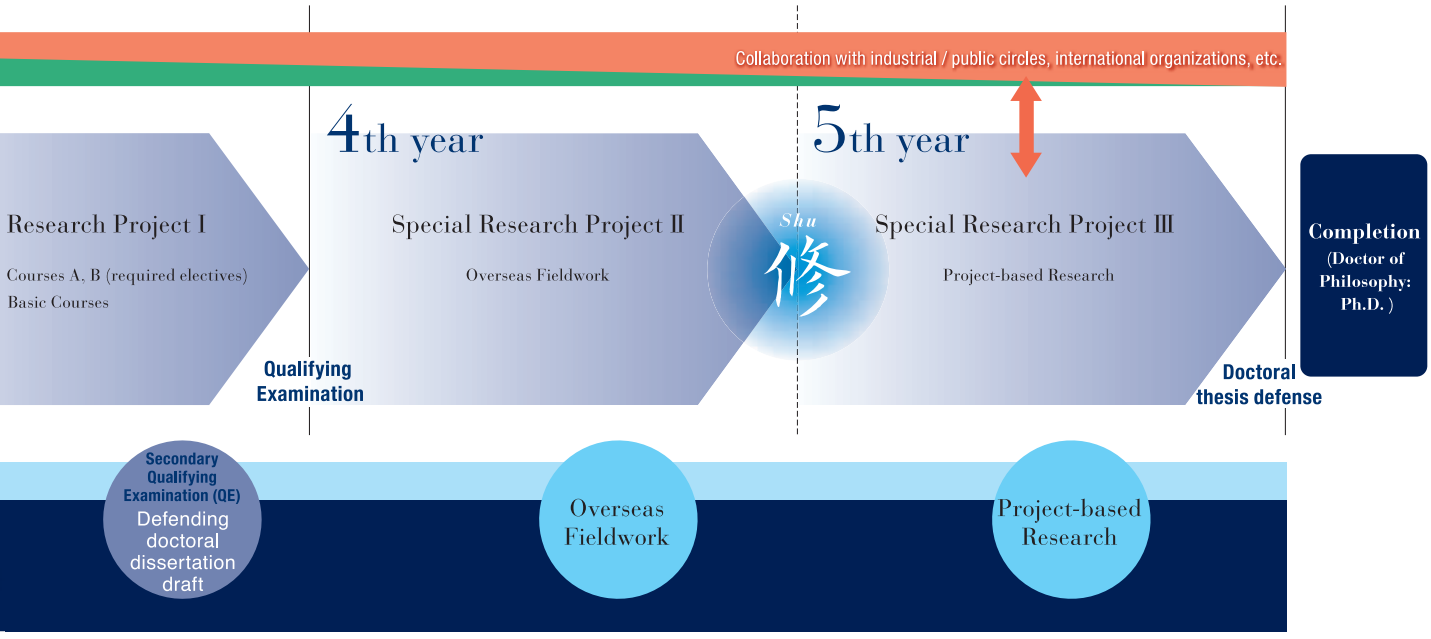
The students are required to complete internships both in Japan and abroad, so that they can understand their own current positions, acquire the experience necessary for considering their future roles, as well as contribute to their research projects in the doctoral program. The service learning programs are conducted in the first and second years both in Japan and developing countries, thus enabling students to pursue their interests by participating in various projects.

Overseas fieldwork

The students will undergo one-year of training with an international organization or overseas office of a Japanese organization. The internship program has been made possible thanks to the kind collaboration of various organizations such as UNESCO, OECD, JICA, as well as leading international companies and universities. During the internship period, students will be placed in one of the organizations for one year to gain international exposure and skills in cross-cultural communications. They are naturally encouraged to examine their own ideas and carry out research based on their own interests.

Project-based research

Academic training, internship service



and fieldwork combine with the unique mentoring system to help students implement their own projects and complete a Ph.D. thesis.

4. Supports for students

The GSAIS accepts just 20 students per year, keeping the student-to-instructor ratio very low. Students receive various kinds of support from the University so that they can concentrate on their studies and research at the GSAIS.

Residential college

The students live in a residential college on campus, which enhances the environment for learning by facilitating student interaction across discipline. Of course, faculty members are available onsite to provide necessary support.

Scholarship

Eligible students receive a scholarship from the University. They also get financial support for their research activities.

Education / research facilities

The GSAIS Building on the Yoshida Campus provides students with education/research facilities, including computers, library access and seminar rooms. Students are also free to tap into Kyoto University's extensive collections housed on various campuses.

Regarding the Graduate School of Advanced Integrated Studies in Human Survivability (*Shishu-kan*) —Interview with Dr. Shuichi Kawai, Dean of GSAIS—

Q: What were the purposes of establishing the Graduate School of Advanced Integrated Studies in Human Survivability (*Shishu-kan*)?

A: To establish a totally new type of a graduate school to be dedicated to cultivating the leaders who will be truly needed in the future global community. This vision, conceived by President Hiroshi Matsumoto, was the origin of the plan to establish *Shishu-kan*. Since our present society is faced with diverse multi-faceted and complex social problems, to address and overcome such problems, we need multi-disciplinary expertise to offer practical solutions and the ability to take action in response to diverse situations. To meet this demand, we have prepared a plan to foster future global leaders who are capable of contributing to the survival of the global community. To realize the plan, we have decided to establish a brand new framework for interdisciplinary education and research programs, centered on a new academic field: Advanced Integrated Studies in Human Survivability.

Q: What types of experience and learning do you think are necessary for students who aspire to become future leaders as envisioned by *Shishu-kan*?

A: It is my hope that the students of *Shishu-kan* will have extensive experiences within and outside Japan. It is crucial to view the world from a standpoint away from their own countries or their own major area of specialization. Such experience will help them develop a capacity to view the world objectively and understand matters that are unfamiliar to them. I strongly feel so when I recall my own youth. I was born in Kyoto and spent most of my time in Kyoto, especially on the campus of Kyoto University. At the age of 22, driven by a strong desire to see the external world, I went travelling with just a single backpack. From Kobe Port, I embarked on a voyage to Taiwan, Southeast Asia, India, and the Middle East. Crossing more than ten countries, I eventually went to Sweden, where I enrolled at an institute of technology. On my way home I crossed the Eurasian Continent. During the long journey, which took three and a half years, I learned to view myself and my country Japan from the outside. This helped me establish my own identity as a Japanese. Subsequently, this experience in my youth helped me tremendously to achieve research outcomes in diverse disciplines, including forestry, materials science, wood technology, psychology and environmental studies.

Shuichi KAWAI
Dean, Graduate School of Advanced Integrated Studies in Human Survivability (*Shishu-kan*)

Q: I heard that the Graduate School's curriculum features a wide variety of academic disciplines, known as "integrated academic foundations in eight fields." What's the purpose of introducing such a curriculum?

A: Through gaining a broad spectrum of knowledge, I truly hope that students will learn the methodology of scholarship. No matter how much advanced scientific knowledge you gain, it is destined to become obsolete sooner or later because of the progress of science. However, if you have knowledge concerning how to learn, you can constantly renew your knowledge base. In this way, I believe that advanced knowledge in methodology will help graduates of *Shishu-kan* 20 years or even 30 years from now, when the present students become leaders of the global community.

Q: What kind of students do you expect to enroll in this program?

A: The most important thing for prospective students to possess is a lofty aspiration to serve others and society. I hope that young people with lofty visions and a high sense of mission will gather here at the *Shishu-kan*, and fly high in global society from this nest.

Kyoto University Becomes Japan's First Institution to Join edX Consortium

(May 21, 2013)

Kyoto University has joined the edX consortium, becoming the first institution in Japan to do so, and will open a course on its platform. This decision was made based on the following grounds:

- Reputable universities such as Harvard University and Massachusetts Institute of Technology (MIT) manage the non-profit educational consortium.
- A new online educational method called "Massive Open Online Courses (MOOCs)" offered through edX is based on the open source philosophy of making platforms and course contents (lectures) universally available.
- The enhancement of the educational experience not only places emphasis on the online course itself but also makes good use of the synergistic effect of blending online classes and on-campus classes (Blended Learning).
- Through the analysis of online learning data and the verification of educational outcomes collected through edX, Kyoto University will have support for its development of educational content.

President Hiroshi Matsumoto (left) and Professor Motonari Uesugi (right) at the press conference

Kyoto University will offer the "KyotoUx" series in edX. The first lecture to be delivered by Kyoto University will be "Chemistry of Life," to be provided by Professor Motonari Uesugi of the Institute for Integrated Cell-Material Sciences and the Institute for Chemical Research. This course will start in the spring of 2014 and student registration for the course will begin this summer.

What Is edX?

edX is a non-profit online learning initiative of xConsortium, composed of leading global universities. Jointly founded by Harvard University and Massachusetts Institute of Technology (MIT), edX is designed to realize the compatibility between online and on-campus education and offers epochal methodologies, learning experiences, the fun and excitement of game-like labs, and the outcomes of cutting-edge research programs on the open-source platform. Imparting knowledge that inspires and raises the awareness of students of diverse generations, social statuses, and income levels, edX is working to build a global community of its students from around the world. (The "X" in edX represents the future of education.)

E-book *Dishes from Around the World* Released

(March 22, 2013)

From 2004 to 2008, the International Exchange Section of the Faculty and the Graduate School of Agriculture organized world cooking classes where international students and researchers from various countries played the role of instructors. The classes were extremely popular: over the years 31 classes were held with a total of 600 participants, comprising both students and faculty members.

Collecting the recipes introduced in the cooking classes, the International Exchange Section recently released an e-book titled *Dishes from Around the World*. It contains recipes for 128 home-cooked dishes from 27 countries/regions, described in both English and Japanese. In addition to the recipes, the e-book runs photographs of natural landscapes and World Heritage Sites in diverse countries, making the book unique and even more attractive than ordinary cooking books.

The e-book also introduces Kyoto University's original programs to promote international friendship. The e-book will help readers prepare dishes of various countries. Moreover, by appreciating the dishes, readers will be able to learn the food cultures of various countries firsthand. You can download the e-book in both PDF format and Apple iBooks format from the following URL: http://www.kyoto-u.ac.jp/en/news_data/h/h1/news7/2013/130322_2.htm.

Mechanism and Reconstitution *in vitro* of Germ Cell Development in Mammals

Germ cells are the only cell lineage that terminally differentiates into sperm (male germ cell) and egg (female germ cell), creates a new individual and transmits genetic information to the next generation. Germ cells deftly convert genome-wide epigenome modifications effected during their development processes and recombine genomic information to acquire totipotency and diversity as a cell. Thus, the understanding and the reconstruction of germ cell's molecular basis are expected to contribute to the development not only of reproductive medicine engineering, but also of stem-cell biology and regenerative medicine in general.

Both sperm and egg are derived from primordial germ cells (PGCs) that are induced at an early ontogenetic stage. Normally produced at the back of an embryo, PGCs pass through developing primitive bowels and migrate into a primary reproductive organ. They then receive signals from the primary reproductive organ and begin to differentiate into sperm or egg. PGC differentiation into sperm or egg progresses through complex processes.

With the aim of elucidating the developmental mechanism of reproductive cells and replicating the process in a test-tube (or culture dish), we have studied the developmental mechanism of the mouse PGC as a first step. As a result, we have successfully identified B lymphocyte-induced maturation protein 1 (BLIMP1) and PR domain-containing 14 (PRDM14) as transcriptional regulators necessary for PGC formation. Furthermore, we have shown that PGCs were induced from epiblasts at embryonic day (E) 6.0 by bone morphogenetic protein 4 (BMP4), and that when the E6.0 epiblasts were cultivated under serum-free conditions in the presence of several cytokines, including BMP4, most of the epiblasts initially expressed *Blimp1* and *Prdm14*, these cells differentiating into PGC-like cells in a few days. Crucially, spermatogenesis was induced when these PGC-like cells were implanted into the neonate-testis of a reproductive cell-deficient W/W^v mouse (*Kit* gene mutated mouse), the induced sperm resulting in the development of healthy offspring by intracytoplasmic sperm injection (ICSI). On the basis of these results, we suggest that in order to induce PGCs from pluripotent stem cells in a test-tube, it is necessary to induce epiblast-like cells and then to induce PGC-like cells.

We therefore began studying the conditions for inducing epiblast-like cells from embryonic stem cells (ESC). We cultivated ESC under conditions in which the "ground state" for ensuring pluripotency was maintained. Study results under different conditions showed that ESC differentiate into epiblast-like cells (EpiLC) when stimulated by Activin A (ActA), basic fibroblast growth factor (bFGF), or low-concentrated knockout serum replacement (KSR). After careful consideration of the gene expression that occurred in connection with the process of differentiation from ESC to EpiLC, we also showed that the change in gene expression was very similar to that associated with the differentiation of epiblasts. In particular, the gene expression of EpiLC (d2EpiLC) after 2 days from the beginning of differentiation (d2) was very similar to that of E6.0 epiblasts. These results show that the *in vivo* epiblast differentiation process was replicated in the process of differentiation from ESC to EpiLC.

We cultivated d2EpiLCs under conditions in which epiblasts were induced into PGC-like cells. As a result, we found that most of the cultivated d2EpiLC expressed *Blimp1* and *Prdm14* after two days from beginning of induction, and that these cells differentiated into PGC-like cells (PGCLCs) in the next several days. The change in gene expression associated with the process of PGCLC induction from d2EpiLC was highly correlated with the change in gene expression when PGCs were induced from epiblasts (Figure 1). We then transplanted the PGCLCs into the neonate-testis of a W/W^v mouse and found the induction of spermatogenesis: the sperm resulted in the development of healthy offspring by ICSI. The system that induces PGCLCs through EpiLCs was also reproduced with different ESC lines or even with induced pluripotent stem cell lines (iPSC lines). The PGCLCs induced from the iPSCs also resulted in healthy sperm, and furthermore, healthy offspring (Figure 1).

Following the same procedure, we induced PGC-like cells from female ESC/iPSC. When female PGC-like cells were cultivated together with fetal ovary somatic cells in an aggregate state, they formed fetal ovary-like clumps of cells (reconstituted ovaries), the PGC-like cells in those clumps shifting into imprint erasure, X-chromosome reactivation and meiosis. When the reconstituted ovaries were transplanted under ovarian bursa of immunodeficient mice, the PGC-like cells differentiated into a mature egg which, after isolation, contributed to the development of a healthy mouse through *in vitro* fertilization (IVF) (Figure 1).

These facts demonstrate that we succeeded in reproducing the PGC-induction process in a test-tube, starting from pluripotent stem cells. Our findings will enable scientists to induce massive amounts of PGCs (on the order of 10^6) and to analyze the induction process in detail. Furthermore, our findings will serve to construct a future foundation for reproducing the entire reproductive cell development process in a culture dish.

Replication of the human reproductive cell developmental process, starting from pluripotent stem cells, can lead to understanding of the causes of the infertility that originates in the malfunction of reproductive cells and to the development of treatments based on these

findings. On the other hand, however, these studies could also open the door to the possibility of regenerative medicine that aims to produce a human infant using reproductive cells artificially created in a culture dish (guidelines published by the Ministry of Education, Culture, Sports, Science and Technology ban the creation of human embryos from pluripotent stem cell-derived reproductive cells). Researchers involved in reproductive cell research should use every opportunity to inform the public of their research purposes and findings. Also, they must not only achieve high research levels, they must have high ethical standards.

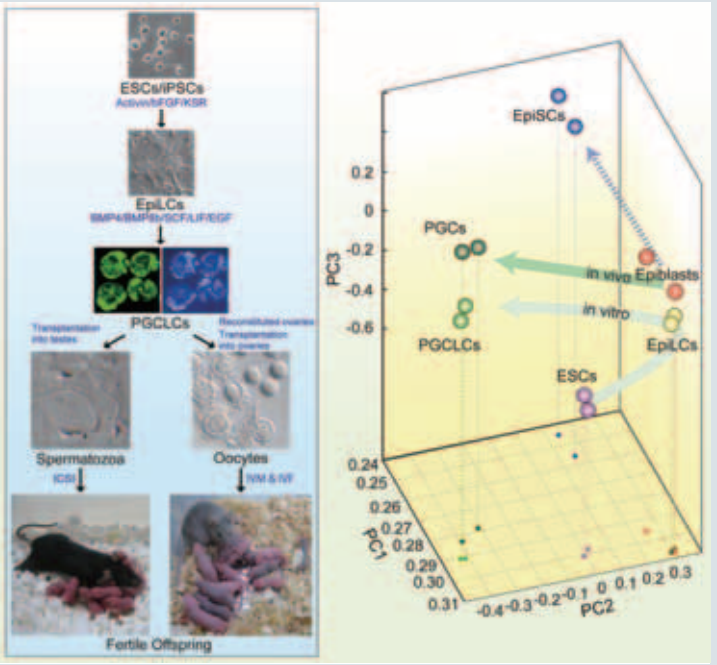


Figure 1 Left half shows PGCLC induction from mouse ESCs/iPSCs through EpiLCs and the creation of sperms, eggs, and fertile mice from PGCLCs. Right shows microarray-based principal component analysis (PCA) of gene expression changes during the process of inducing PGCLCs from ESC through EpiLCs. Analysis shows that change in gene expression associated with differentiation from EpiLCs to PGCLCs is very similar to that in gene expression associated with differentiation from epiblasts to PGCs (revised from Hayashi et al., Cell, 146, 519-532, 2011).

Mitinori SAITOU

- Born in 1970
- Field of specialization: Molecular Biology, Developmental Biology, Epigenetics
- Completed doctoral degree at Graduate School of Medicine, Kyoto University
- M.D., Ph.D., Kyoto University
- Professor, Graduate School of Medicine, Kyoto University
- URL http://www.med.kyoto-u.ac.jp/E/grad_school/introduction/1103/

Rather than seizing on a brand new idea, or taking a shortcut by imitating other scientists, I will remain slow but steady, opening up my own way by approaching a problem *through the front door*.

As a young boy, Professor Saitou became interested in a wide variety of subjects. He loved insects, read books on astronomy, and contemplated the mystery of the cosmos and the evanescence of human lives. After enrolling at a prestigious high school, he continued to read many books on diverse subjects, ranging from space physics to humanities. Since many such books were written by professors of Kyoto University, he became fascinated by Kyoto University's "historical commitment to academic freedom" and entered the university in 1989. Although he had initially planned to enroll at either the Faculty of Science or the Faculty of Agriculture, and eventually to engage in environmental protection activities at the United Nations, his interest in the brain and nerves led him to enroll at the Faculty of Medicine, the Professor explained.

Coincidentally, researchers were beginning to identify the genes responsible for the abnormal multiplication of cells in cancer. This made Professor Saitou interested in cell multiplication and differentiation. At the graduate school, he joined the lab led by the late Professor Shoichiro Tsukita to study morphological molecular biology. In his third year at the graduate school, he selected germ cell formation as his research theme, since he thought that germ cells are crucial in the understanding of life, death, and aging. "I also wanted to select an interesting theme from a philosophical viewpoint," he added.

After studying in the United Kingdom for three years, he was appointed as a team leader at RIKEN in 2003. At RIKEN, Professor Saitou continued to search for a gene that works in primordial germ cell formation by thoroughly investigating the functions of each respective gene one by one. Although this research required untiring efforts and patience, he said, "I checked datum after datum, following the exhortation of Professor Tsukita that we have to be steadfast in our vision and approach any problem *through the front door*, while referring to holistic knowledge of life science." As a result of painstaking hard work, in 2005, his team finally succeeded in identifying the relevant gene: Blimp1.

He joined Kyoto University in 2009, where he succeeded in generating sperms, and eventually ova from pluripotent stem cells of mice. In many other works, he also made great achievements, which are highly valued around the world. All his achievements have resulted from his painstaking and untiring efforts. Professor Saitou has been devoted to research themes that have great potential for future applications, but which are not so appealing and so remain mostly unnoticed. To the question, "Are you following the teaching of Professor Tsukita," Professor Saitou nodded earnestly.

In the Path of Islamic Area Studies:
Understanding Islamic Societies through Primary Sources and Fieldwork

Area Studies aims at surveying, studying and comprehending the various areas of the world, such as the Middle East and North Africa, Sub-Saharan Africa, and Southeast Asia. It involves in most cases learning about an area, or country, or society, alien to the student so that it surprises him/her with exciting encounters.

In our Graduate School of Asian and African Area Studies (ASAFAS), students go into the field, climbing up into mountainous regions, living in agricultural villages, wandering through markets in cities and observing local industries, in order to understand the life of people in those areas. In my area of research, the Islamic Middle East, students are conducting field research on various topics. Often one third of graduate students are in the field, so all come to the common seminar only at the beginning of an academic year.

Area Studies in Japan has purposely developed in a different way than in the US, and as a result has been highly evaluated in Asia and Africa. Even today, in Asia and Africa, some people characterize Area Studies as American-dominated hegemonic scholarship. The Center for Southeast Asian Studies and the Center for African Area Studies at Kyoto University pioneered such studies, which ASAFAS directly inherited. In a nutshell, Area Studies engenders mutual understanding and cooperation among the peoples of the world. In other words, it strives to build a better global society by better understanding one another.

Since research in the United States after the end of the Cold War has moved toward universalism, Area Studies in Japan, seeking to explore the details of the inherent variety in the world, has gained more weight. While globalization is increasing, its manifestations and responses differ from one society to another. Even the study of globalization in Area Studies poses questions about the uniqueness of each area.

The interdisciplinary nature of research is one of the basic pillars of Area Studies. Because an area is the sum of its human activities, comprehending an area requires a perspective that is interdisciplinary, not confined to a particular discipline. I myself have been actively involved in various fields of Islamic Studies, Comparative Politics, and International Relations in order to study the realities of the grassroots movements for Islamic revival in the Middle East. Furthermore, human activities are based on interrelations with nature and the environment. Kyoto University has not only strengthened Area Studies but also has been promoting research that combines the natural and social sciences as well as humanities, resulting in a unique position in the world, since Area Studies is usually considered part of the social sciences.

In pursuing research in Area Studies, interdisciplinary theoretical thinking, field work, and primary sources are necessary. If we don't know the language(s) of a given society, we cannot understand that society. It is imperative as a communication tool. Moreover, we should understand the universe in which the people of a locality think, speak, interact, and live. We need to grasp the inherent logic of the language since we all perceive the world through our mother tongues.

Studying primary sources and books written and read in language(s) of the area is a method of digging up a treasure trove of accumulated local knowledge and disclosing its inherent logic and ways of thinking. In a language with a wealth of historical sources such as Arabic, this kind of research can connect our contemporary studies with the depth of historical background. For Islamic Area Studies, a term coined in Japan 15 years ago, Arabic is crucially important as a native language of Arab countries and as a lingua franca of the Islamic world.

Since the establishment of ASAFAS in 1998, we have strived to collect Arabic resources. Thanks to all those who have engaged in our vision, the Arabic collection at Kyoto University is now the largest in Japan. We are also collecting secondary sources in Western languages, while our continuing accumulation of resources at the Center for Southeast Asian Studies and Graduate School of Letters also forms a point of strength for us. What this means is if I am researching some topic, two thirds of the materials I might be looking for are usually available in just 15 minutes. Our students find great advantage with this condition.

As part of Islamic Area Studies, South Asia constitutes an important area of research. For this reason, we have acquired an Urdu collection, the so-called *Aqeel Collection*, named after a scholar whose love for books and literature created this marvelous collection. This is the second largest Urdu collection in the world, and the best in terms of contemporary studies. Our policy, as researchers, is to immediately catalogue and shelve books we acquire so that all researchers in Japan can use them without serious delay. We are currently concentrating on making this collection available to the public.

We have also digitized some important primary sources. The best example is *Majalla al-Manar* (The Light House), published in Cairo from 1898 to 1935. This Arabic journal had circulated from Java in the east to Morocco in the west. In its forty thousand pages are recorded various ideas of Islamic revival as well as correspondence and information from near and far areas of the Islamic world. Our objective, to

digitize this journal with large indexes was to make such a rich primary resource available to all researchers, especially younger ones, to help facilitate their studies.

The Islamic world in general and Arab countries in particular have entered an era of turbulence in the 21st century. We have observed the events of 9/11, the Iraq War, the ongoing "Arab Spring" since the end of 2010, and the resultant civil war in Syria, among others. These events are also deeply correlated with decades-long issues of the Palestine Question and Gulf Security. Through these developments, satellite TV and the Internet have significantly expanded their roles, and extended the horizons of the primary sources that we aim to grasp. We could call this the challenge of the age of globalization and digitization in Area Studies, adding further excitement to our research.

Figure 1 Kosugi's works in Arabic: Edited collections of primary texts, bibliographical data of Arab periodicals and *Journal of al-Manar* on CD-ROM (in the front)

المنار

١٣١٥

مجلة شهرية تبحث في فلسفة الدين وشؤون الاجتماع والعمران

« تصدر في كل شهر عربي مرة »

لمنشئها

السيد محمد رشيد رضا

عنوانها (مصر – ادارة مجلة المنار) والتلغرافي « المنار بمصر »

المجلد الاول

سنة ١٣١٥ وسنة ١٣١٦

قيمة الاشتراك عن سنة ستون قرشاً صاغاً في مصر والسودان

وفي المملكة العثمانية ثلاثة ريالات ونصف وفي الخارج ١٨ فرنكاً

و١٥ شلناً في الهند و٧ روابل في روسيا والدفع سلفاً

﴿ حقوق إعادة الطبع والترجمة لكل أو البعض محفوظة للمنشئ – المجلة ﴾

Figure 2 The first page of Vol.1 of *al-Manar*, from the digital edition

---

Yasushi KOSUGI

- Born in 1953
- Field of specialization: Islamic Studies, Middle East Area Studies
- Graduated from the Faculty of Islamic Studies, Al-Azhar University
- LL.D., Kyoto University
- Professor, Graduate School of Asian and African Area Studies, Kyoto University
- URL http://www.asafas.kyoto-u.ac.jp/en/divisions-staff/staff

I want to construct a new study of Islam here in Japan, a study that contributes to the development of Islamic area studies for the 21st century.

Intellectual curiosity toward unknown affairs—this has always been Professor Yasushi Kosugi's driving force in his research activities. From the days of his earliest recollection, he embraced an aspiration to go to far-away countries to see the world unknown to him, Professor Kosugi said. When he enrolled at a university for foreign studies, he selected Arabic as his major primarily because the language was unknown to most Japanese people.

In 1975, he began studying Arabic in Egypt for eight years. It was during this period that he began to develop an interest in area studies. While studying at Al-Azhar University, where he received his bachelor's degree, he visited several other Islamic countries, witnessing firsthand the impacts of the Iranian Revolution and the Lebanese civil war. His own experience of walking around towns undergoing such upheavals convinced him that the essence of area studies resided in shedding light on common values of local residents, that is, the values that they take for granted and therefore seldom think twice about. To date he has continued to conduct area studies based on this conviction.

Being a non-Western country, Japan has an affinity with the Islamic world. At the same time, Japanese people have developed their nation by assimilating Western sciences, culture, and philosophy. Because of this background, he believes that Japanese people should hold trialogues with people from the Western world and from the Islamic world concerning Islamic area studies and other subjects. By organizing such trialogues, he believes that Japanese people can help promote unbiased mutual understanding between the West and the Islamic world. With this in mind, he is striving to construct the Study of Islam for the 21st Century, an academic area that benefits the areas studies of the contemporary Islamic world. Having collected 20,000 Arabic books, he is working on building a world-class center of Islamic area studies at Kyoto University. He is also committed to fostering future researchers of Islamic area studies. With a mischievous smile, he explained that his exceptional curiosity was probably nurtured in his hometown in Hokkaido, Japan's last frontier and home to pioneers.

On Shaky Ground

During the few minutes' duration of a large earthquake, the energy released is equivalent to the yearly energy use of an industrial country like Japan. So it is not surprising that powerful earthquakes can cause so much damage. To study large natural events, such as earthquakes and volcanic eruptions, and to potentially reduce their destructive effects, are the reasons I began to study seismology. I think it is fascinating that the tectonic activity of the Earth that builds mountains and creates oceans in over millions of years also causes earthquakes that occur in a very short amount of time.

When a person first feels the shaking of an earthquake, he or she becomes quickly alerted and anxiously waits to see if the movements soon stop, indicating a small event, or if the motions continue to grow stronger and develop into a large earthquake that can cause great destruction. Seismologists are doing the same but use sensitive instruments close to the epicenter, so they can observe the smallest movements at the beginnings of earthquakes. However, similar to the ordinary person that feels an earthquake, seismologists cannot anticipate if the earthquake will be a small or large event. This is because any size earthquake initiates from a small area. Small earthquakes stop soon while large earthquakes grow to dimensions of hundreds, or possibly a thousand, kilometers. Despite decades of study, researchers have not been able to detect differences between the beginnings of small earthquakes that frequently occur and the beginnings of the uncommon large earthquakes. This is one reason why we cannot currently predict earthquakes.

Even though earthquake prediction is not possible at present, seismologists and earthquake engineers have made significant progress in understanding seismic events and reducing the resultant damage. For example, the tsunami from the 2011 Tohoku-oki earthquake took thousands of lives, but there were relatively few people killed from the very intense ground shaking. This can be attributed, at least partly, to the advanced engineering standards for buildings in Japan. Similar levels of shaking in almost any other country would have produced many times the number of deaths. So countries like Japan have been able to reduce the destructive effects of seismic activity.

Earth scientists are pursuing many different types of geological and geophysical studies to better understand the physical processes of large earthquakes. For the 2011 Tohoku-oki earthquake, one of the most important topics is to understand the huge fault movement that occurred and caused the large tsunami. The fault displacement was over 50 meters, which is the largest ever observed in an earthquake. Recently, I was involved in a project that drilled an ocean borehole to the fault of the recent earthquake,

about 820 meters below the seafloor. This was a large international project using the research ship Chikyu and had ambitious science objectives of measuring the frictional level on the fault and obtaining a physical sample of the fault-zone. The drilling was also technically very difficult because the water depth was about 7000 meters and needed new equipment and techniques to complete the project. This is a good example of using the most modern technology to obtain important information for earthquake studies.

Japan is a land of earthquakes which directly affect all the people in the country. We cannot stop or control the natural processes that cause seismic events but we can improve our understanding of their mechanisms and effects. Kyoto University leads many aspects of this research in seismology and earthquake engineering. I encourage any interested students to pursue these exciting fields that have direct societal impact to Japan and the whole world.

James Jiro MORI
- Born in 1956
- Field of specialization: Seismology
- Completed doctoral degree at Columbia University
- Ph.D., Columbia University
- Professor, Disaster Prevention Research Institute, Kyoto University
- URL http://www.eqh.dpri.kyoto-u.ac.jp/~mori/

"The 2011 Tohoku-oki earthquake has imposed a great challenge on us, as seismologists. However, I do believe that my research activities will definitely benefit people and society."

Professor James Mori was born to a second-generation Japanese-American couple living in the suburbs of Chicago. His favorite subjects in senior high school were physics and biology and he majored in physics during his undergraduate days. When he was a junior student, he participated in a summer program at Columbia University. At that time, he was fascinated by a lecture given by a geophysicist. Professor Mori said that geophysicists can observe what is happening on the earth with their own eyes and that they can fly around the world to conduct research activities. This type of life seemed to him very attractive. He then went to the graduate school of Columbia University to study faults and seismic mechanisms.

After completing graduate studies, he began working at the Rabaul Volcano Observatory in Papua New Guinea, because he thought "it would be interesting to observe the volcano, which was very active." With a smile, he added, "My friends and teachers were surprised by my decision." Three years later, he returned to the United States and joined the U.S. Geological Survey (USGS). In 1994, he experienced the Northridge Earthquake in California. This earthquake had features in common with those of the Great Hanshin-Awaji Earthquake of 1995. For instance, both caused extensive damage, much greater than that normally expected of an earthquake of the same seismic intensity. After these two earthquakes, seismologists shifted the focus of their research activities from simply surveying natural phenomena to predicting damage by earthquakes and proposing risk reduction measures, said Professor Mori.

In 1999, he joined the faculty of Kyoto University. In 2011, the Tohoku-oki earthquake took place. To study the mechanisms of the earthquake and tsunami, in April 2012, he joined Japan Trench Fast Drilling Project (JFAST) as co-chief scientist. JFAST uses the deep-sea drilling vessel 'Chikyu' to reach the fault soon after an oceanic earthquake for the first time. Professor Mori said, "Rather than the scale of seismic intensity, it is more important to predict the impact of an earthquake on people and society. We are studying seismic mechanisms with this purpose." His strong resolve to clarify seismic mechanisms is reflected in the following words: "To that end, we must always embark on new projects." Back in 1890, his grandfather walked some 150 km (95 miles) from his hometown to Yokohama and crossed the ocean to the United States. The strong curiosity and adventurous spirit of his grandfather have been inherited by Professor Mori, who constantly seeks a new research opportunities.

"I am pleased to be able to engage in cutting-edge research activities in such a favorable environment. I also enjoy promoting mutual understanding between international students and Japanese people."

Kyoto University annually offers the Kyoto University President Awards to students and student organizations that have made extraordinary achievements in academic works, extracurricular activities, or social activities. In 2013, the Award was presented to Mr. Yong Liang, a Ph.D. student at the Noda Laboratory, Graduate School of Engineering. He was awarded in recognition of the outcomes of both his research and social activities. First, a paper on photonic-crystal lasers in which he was a contributor was featured on the journal cover of *Nature Photonics*. Second, in recognition of his commitment to promoting international friendship, he was appointed as a Kyoto Prefecture Friendship Ambassador. This time, your correspondent had the pleasure of hearing from him about his commitment to cutting-edge research programs and international exchange activities.

Mr. Liang, I heard that you came to Japan upon your graduation from high school in China. Is that right?

Yes. When I was a high school student, I was fascinated by the precise manufacturing technologies of Japanese products imported to China. This is why I began to aspire to study in Japan. A friend of my father's who was in Japan suggested that I should come to Japan before entering a university. He said that by coming to Japan at a younger age, I would be able to learn the Japanese language more quickly. Moreover, younger people, who have a flexible mindset, can adapt themselves to Japanese society with greater ease, he said. So I came to Japan immediately after graduating from high school.

Did you have a specific research target when you came to Japan?

I wanted to study electrical and electronic technologies and to become an engineer. My initial plan was to complete the master's program at a graduate school and join a Japanese electronics manufacturer. However, I was encouraged by a mentor to continue my research activities, and finally decided to advance to the doctoral program.

What made you decide to study under Professor Susumu Noda?

When I was an undergraduate student, I found Professor Noda's class to be extremely interesting. He showed us a simulation of a cutting-edge research program on a PC. It was truly inspiring. Professor Noda clearly showed us how our basic studies are related to cutting-edge research programs. This is inspiring for students who are not so sure whether their present studies will be of any benefit to them. Moreover, the Noda Laboratory is distinguished by the world's most advanced research programs and has cutting-edge equipment. I selected the Noda Laboratory in order to engage in innovative research activities, although at that time I did not have a specific research theme in mind.

What kind of impression did you have of the Noda Laboratory after you joined it?

Well, Professor Noda keeps a rigorous approach towards research. We have group meetings every two weeks, where we give presentations on our research processes. At that time, we can seek advice from Professor Noda, but at the same time he asks for detailed explanations and raises totally unexpected questions. Accordingly, we must thoroughly prepare for the presentations; otherwise he would question us rigorously. Professor Noda upholds a steadfast vision for his research programs, and this is encouraging for us, particularly when we are struggling without gaining any results from our research activities.

What type of research activities are you engaged in at the Noda Laboratory?

The 21st century is sometimes called the "Age of Light." At our laboratory, we are committed to research programs on the theme of optical nanostructures (photonic crystals), which enable arbitrary manipulation of photons. Our research programs range from those concerning fundamental physics to applied studies. By exploiting the characteristics unique to optical nanostructures, we seek to develop innovative optical technologies to be embodied in various devices that will benefit society, such as ultrahigh efficiency solar cells, multi-functional next-generation laser sources, and optical buffer memories.

Do you have any particular research area in mind you wish to engage in?

Current printers and projectors basically use external mirrors to control the emission directions of semiconductor lasers. If photonic crystals are employed in their place, this will enable laser devices themselves to control their emission directions. This in turn will enable radical downsizing of devices and lengthening of their products' lives. This innovative technology will have a broad range of applications.

By the way, you have been appointed as a Kyoto Prefecture Friendship Ambassador, haven't you?

I like meeting and talking with people. I applied for the ambassador program because I thought that

participating in the program would be helpful to broaden my perspectives. My tasks as a friendship ambassador include participating in various events to promote international friendship and visiting elementary schools to introduce Chinese culture. International students from diverse countries also gather to hold cooking classes. One such event is the Cooking World Cup for International Students, at which I have been awarded for the second consecutive year. This academic year, I have been appointed the chair of the program's activity committee. I feel truly happy to see international students fostering friendships with Japanese people.

Finally, will you tell us any good points of Japan from your own point of view?

My impression of Japan has changed considerably since coming to Japan and getting to know Japanese people. I learned firsthand that Japanese people are friendly, kind, and polite. We all know that there are no national borders in science. It is my sincere hope that through my research and international friendship activities, I will be able to help promote international understanding and goodwill, transcending national borders.

Yong LIANG
- Born in 1984
- Currently Ph.D. student (JSPS research fellow) at the Graduate School of Engineering, Kyoto University

Daw Aung San Suu Kyi Gives a Lecture at Kyoto University

April 15, 2013

Daw Aung San Suu Kyi, chairperson of the National League for Democracy (NLD) of the Republic of the Union of Myanmar, visited Kyoto University on April 15, 2013 to deliver a lecture. The lecture was one engagement in her first visit to Japan in twenty-seven years since she studied at the Center for Southeast Asian Studies, Kyoto University in 1985 to 1986.

Daw Aung San Suu Kyi, an internationally recognized pro-democracy leader, was awarded the Nobel Peace Prize in 1991 in recognition of her contribution to the nonviolent struggle for democracy and human rights. She was also awarded the United States Congressional Gold Medal in 2008. As a representative in the lower house of the Burmese House of Representatives, she has been actively involved in negotiations for settlement and democratization with the new government established in 2011.

Arriving at the main entrance of the Clock Tower Centennial Hall at around 11:00 a.m., Daw Aung San Suu Kyi was escorted by Professor Michiaki Mishima, Executive Vice-President for international affairs and hospital administration, to the guest room. There she met with Kyoto University president, Dr. Hiroshi Matsumoto. She was also welcomed by Professor Akihiko Akamatsu, Executive Vice-President for student affairs and library services, Professor Toshiyuki Awaji, Executive Vice-President for education, Professor Nobuyoshi Esaki, Executive Vice-President for general affairs, planning and information infrastructure, Professor Noboru Nishisaka, Executive Vice-President for finance, facilities and environmental health and safety, Professor Kiyoshi Yoshikawa, Executive Vice-President for research, and Professor Hiromu Shimizu, director of the Center for Southeast Asian Studies.

Moving to the Clock Tower Centennial Hall, Daw Aung San Suu Kyi was met with great applause from the assembled Kyoto University students. President Matsumoto then presented her with the first honorary fellowship in Kyoto University's history for her outstanding and internationally-recognized achievements. Following the award ceremony, she delivered a lecture titled "Socio-Political Change in Recent Burma and Women's Participation in It." During the question and answer session which followed the lecture, Daw Aung San Suu Kyi answered questions from students in her characteristically conscientious manner, before being presented with a bouquet of flowers as a token of thanks.

After the lecture, Daw Aung San Suu Kyi visited the Center for Southeast Asian Studies. She was engaged in research on her father, General Aung San, who is known as the leading architect of Burmese independence and "the founder of Union of Burma." She was welcomed to the center by its director, Professor Hiromu Shimizu, and its staff members. She visited the center's Aung San Suu Kyi Room, which is preserved as it was at the time of her studies. There, she enjoyed talking with the center's members, while viewing journals and albums from the period, and recalling her time there. Her visit to Kyoto University concluded with the presentation of a bouquet of flowers by a member of the center's staff and a commemorative photo session in the courtyard.

Honorary fellowship award ceremony

Daw Aung San Suu Kyi delivers her lecture

Japan-China Students' Discussion Forum Held at Kyoto University May 27, 2013

On May 27, 2013, thirty-five students selected from six universities in China (Tsinghua University, Renmin University of China, China Agricultural University, Beijing University of Posts and Telecommunications, Beijing Foreign Studies University, and the University of International Business and Economics) visited Kyoto University to take part in a students' discussion forum. The event was held as part of the 12th "Get to Know Japanese Companies and Experience Japan" project, hosted by The Japanese Chamber of Commerce and Industry in China, a Beijing-based association of Japanese companies. This year, the project was co-hosted by Kyoto University's Organization for the Promotion of International Relations (OPIR), which recruited forty students from Kyoto University to join the forum.

Upon arrival at Kyoto University's Yoshida Campus, the Chinese students received a general introduction to Kyoto University and a student-guided campus tour. Following that, the participants divided into six mixed groups covering different topics, and discussed their opinions. The discussion topics were varied: from difficulties faced by today's young generations, such as environmental issues and economic globalization, to familiar topics such as university students' views on love and preserving traditional culture. The forum was brought to a close with each group presenting their ideas in English, Japanese, or Chinese, with the diversity of the participants' opinions providing a broad and sophisticated perspective on the subjects.

After the forum, participants were invited to a dinner reception, where they were joined by Executive Vice-President Noboru Nishisaka, Executive Vice-President Akihiko Akamatsu, and Kyoto Prefectural Vice-Governor Akimasa Yamashita. The event provided a good opportunity for future intellectual leaders of China and Japan to deepen their mutual understanding.

Group photo in front of the ClockTower Centennial Hall

AUTM Asia 2013 Kyoto March 20—22, 2013

AUTM Asia 2013 Kyoto was held at the Kyoto International Conference Center on March 20–22, 2013. The event was held by Kyoto University in collaboration with the University Technology Transfer Association (UNITT), and was made possible through the support of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan.

The Association of University Technology Managers (AUTM) is a nonprofit association of university technology transfer offices, research organizations, hospitals and companies that license from universities, research organizations and hospitals based in the U.S. AUTM Asia is a platform for academic research institutions, industry, technology transfer professionals, and entrepreneurs to meet and discuss current issues related to commercializing technology, with a particular focus on the characteristics of the Asian region.

The first day of the conference began with a welcome address by Dr. Hiroshi Matsumoto, president of Kyoto University. The address was followed by keynote speeches by Mr. Hideki Niwa, vice-minister of MEXT; Mr. Keiichi Kawakami, deputy director-general for Industrial Science and Technology and Environment of the Ministry of Economy, Trade and Industry (METI); Mr. Sean P. Flanigan, president of AUTM; Dr. Tadashi Matsunaga, president of UNITT; and Dr. Keisuke Makino, president of AUTM Asia 2013 Kyoto.

The three-day conference included eighteen seminar sessions on topics such as venture trends, license negotiation, and R&D trends. Exhibition booths operated by law firms and other companies provided attendees with information regarding business and R&D activities, and also provided licensing opportunities. The conference seminar featured various professionals engaged in the commercialization of university research, and provided an arena for not only the speakers and moderators, but also the attendees, to share their experience and knowledge.

Participants of AUTM Asia 2013 Kyoto

For inquiries regarding *Raku-Yu*, contact:
Public Relations Division
KYOTO UNIVERSITY
Yoshida-Honmachi, Sakyo-ku,
Kyoto 606-8501, Japan
URL http://www.kyoto-u.ac.jp/en/issue/rakuyu/
PDF files of *Raku-Yu* may be downloaded from the above URL
E-mail kohho52@mail2.adm.kyoto-u.ac.jp
TEL +81 75 753 2072 FAX +81 75 753 2094

P R O M E 京都逍遥 N A D E

Maruyama Park: A City Park That Has Long Looked Over Kyoto and Its Residents

Maruyama Park stretches from Yasaka Shrine to the foot of the Higashiyama Mountains. To visit the Park from Kyoto University Yoshida Campus, go southward along the Higashi-Oji Avenue for 2.5 kilometers. Constructed in 1886 as the first city park in Kyoto, the Park has many historic sites associated with the Meiji Restoration (1868) in its premises of 86,641 square meters, and is nationally designated as a historic site and place of scenic beauty. Along the Park's eastern border on the foot of the Higashiyama Mountains, many prestigious Japanese-style restaurants stand amid deep greenery. Although the Park attracts tourists throughout the year, it is particularly well known for its cherry blossom. In the early spring, tourists from Japan and abroad enjoy viewing hundreds of cherry trees in full bloom. In particular, a tall weeping cherry tree standing in the central section is regarded as a symbol of the Park.

After the opening of the Park, it was expanded twice. In 1912 the layout was redesigned by Goichi Takeda (1872 - 1938), a leading architect of modern Japan. He founded the Department of Architecture and Architectural Engineering, the Faculty of Engineering at Kyoto Imperial University, and designed many structures of the university, including the main hall of the department (1922) and the Clock Tower (1925). The present Maruyama Park features a Japanese-style garden with a pond and a path around it. Based on Takeda's grand design, this garden was created by Jihei Ogawa, a celebrated garden designer.

To the south of Maruyama Park, there is an outdoor concert hall (Kyoto City Maruyama Park Concert Hall) with 3,000 seats. Between 1973 and 2011, a folk song festival known as *Yoi-yoiyama* Concert* was held there 30 times on July 15. The concerts held in the hall were regarded as symbolic events of the folk song boom, which was influenced by the surge of grassroots civil movements. Today, the music hall continues to serve residents of Kyoto as an indispensable venue of various grassroots events.

In autumn, the Park commands beautiful views of the Higashiyama Mountains covered by bright red maple foliage. There visitors can appreciate a deep-autumnal atmosphere while viewing crimson maples and sipping hot powdered green tea.

*The annual Gion Festival eve (July 16) is called *yoiyama*, so the concert, held on July 15 or the day before the festival eve, is called *yoi-yoiyama*.

The Park and its vicinity offer an ideal strolling course in autumn, since the Park and many nearby temples, including Kodaiji Temple and Shoren-in Temple, are well known for the beauty of crimson foliage.

This photo shows a scene from the event "Outdoor Museum for Children, in Maruyama," held at Maruyama Park Concert Hall on May 5, 2013, by the Kyoto University Museum.

The weeping cherry tree in the center of the Park is commonly known as *Gion no yozakura* (night cherry blossom in Gion). The 12-meter-tall tree has a trunk of 2.8 meters in circumference.

Goichi Takeda, known as the father of architecture in the Kansai region, was befriended by Frank Lloyd Wright. In addition to designing the National Diet Building and many other renowned buildings, he was involved in the restoration of ancient structures.

This bridge, crossing Hyotan Pond in the center of the Park, was designed by Takeda.